REMARKS

In response to the communication dated June 29, 2006, the Applicant has revised the amendment as filed on April 12, 2006 to indicate that claims 1-13 were cancelled, as per the Examiner's instructions.

Claims 14-18 and 21-39 are pending and under examination in the above-identified application. Claims 21, 23, 24, 26, 31, and 34-37 have been amended support for which can be found throughout the specification including, for example, at page 6, lines 28-31. Claim 33 has been cancelled. Following entry of this amendment claims 14-18, 21-32 and 34-39 will be pending. Applicants have reviewed the rejections set forth in the Office Action mailed October 18, 2005, and respectfully traverse all grounds for the reasons that follow.

Rejections Under 35 U.S.C. § 102

Claims 14-18 and 21-39 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Chee et al., U.S. Patent No. 6,355,431. The Office asserts that Chee et al. describe the claimed microsphere subpopulations having multiple and different analytes allegedly because Chee et al. describe "multiple arrays having different samples" (Office Action, page 8, para. 2). In particular, the Office alleges that Chee describes microsphere subpopulations having multiple and different analytes and that the claims do not require different analytes on a microsphere (Office Action, page 9, para. 2). The Office further alleges that even if the claims require multiple targets per microsphere, any of the three previously described embodiments of record anticipate the claimed invention (Office Action, page 9, para. 3). In maintaining the rejection, the Office alleges that description of a target comprising two target domains in Chee et al. is equivalent to a plurality of different target analytes (Office Action, page 8, para. 3). Each of the above assertions are addressed in turn below.

As an initial matter, Applicants disagree with the assertion in the Office Action that Applicants appear to be asserting that the definition of target requires that the entire target (i.e. entire molecule) is detected thereby differing from Chee's multiple target domains within the target. Whether or not the entire target analyte is detected is not germane to Applicants' arguments distinguishing the claimed invention. Rather, Applicants' arguments were and are

intended to distinguish a plurality of different target analytes attached to a microsphere as claimed from a single target analyte (having a plurality of different target domains) that is attached to a microsphere as described by Chee et al. As set forth in further detail below, the claims are novel, at least in part, because of this distinction.

Applicants maintain that Chee et al. fails to describe all elements of the invention as claimed. *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1349, 48 U.S.P.Q.2d 1225, (Fed. Cir. 1998); *Shearing v. Iolab Corp.*, 975 F.2d 1541, 1544-45, 24 U.S.P.Q.2d 1133, 1136 (Fed. Cir. 1992). Chee et al. fails to describe microsphere subpopulations each having a plurality of different target analytes where the plurality of different target analytes are attached to each of the microspheres and where the plurality of target analytes are from an individual.

Applicants' submit that the Office's conclusion that the claimed microsphere subpopulations having multiple and different analytes is anticipated allegedly because Chee et al. describes "multiple arrays having different samples" is unsupported by the plain language of the claims. The Office appears to equate the terms "subpopulations of microspheres" to "a population of multiple arrays." Analogizing microspheres to arrays is inconsistent with the use and meaning of the claimed term because a microsphere is not equivalent to an array. Rather, a claimed microsphere, is a component of an array. Therefore, for a proper element-by-element comparison, the claimed population of microspheres should be compared to a microsphere population purported to be described in Chee et al. Similarly, the claimed subpopulations of microspheres should be compared to any subpopulation of microspheres purported to be described in a population of microspheres by Chee et al. The Office fails to make this comparison, instead, analogizing subpopulations of a population of microspheres to multiple arrays. Absent some description in Chee et al. of a population of microspheres containing first and second subpopulations of microspheres that each additionally comprise a plurality of different target analytes, the alleged array formats in Chee et al. fail to describe the invention as claimed.

Applicants respectfully disagree with the assertion in the Office Action that the instant claims do not require different analytes on a microsphere. The claims recite that different target analytes or target sequences are attached to *each* of the microspheres. Although the claim

language requires different analytes on a microsphere, Applicants have amended the claims to further prosecution. Accordingly, claim 14 and its dependents recite that "a plurality of said different target analytes are covalently attached to *each* of said microspheres," claim 21 and its dependents require that "at least first and second different target nucleic acid molecules are covalently attached to *each* of said microspheres," claim 23 and its dependents require that "a plurality of said different target nucleic acid molecules are covalently attached to *each* of said microspheres," claim 35 and its dependents require that "a plurality of different target analytes are attached to *each* of said microspheres," claim 36 and its dependents require that "said plurality of first and second different target nucleic acid molecules are attached to *each* of said microspheres" and claim 37 and its dependents require that "the plurality of said different target nucleic acid molecules are attached to *each* of said microspheres" (emphasis added). As set forth in further detail below, the claims are distinct from Chee et al. because Chee et al. does not describe different analytes, whether they be different nucleic acid molecules or any other different molecules, attached to each microsphere in the context of the claimed methods.

The assertions that Chee et al. describe three embodiments of the claimed invention and the Office's ascribed meaning to the term "target analyte" appear related because the Office has maintained its rejection for the reasons of record despite Applicants amendments and remarks. Before addressing the three embodiments of Chee et al., Applicants will address the meaning of the term "target analyte." The Office appears to have accorded little weight to Applicants' previous response which further distinguished the target domains described by Chee et al. from the claimed target analytes. Rather, the Office attempts to explain why the definition of the term "target analyte" fails to distinguish the claimed invention by an apparent cursory conclusion that "neither the claims nor specification define the target detection or its detection [*sic*] as an entire molecule." Office Action, page 9, para. 1. Applicants submit that such an apparent conclusory dismissal of Applicants' amendment and arguments fails to satisfy the Office's burden because there is no factual basis or reasonable rationale provided to support such a conclusion. Applicants' further submit that just the opposite is supported by the application as filed.

The law is clear regarding the meaning of a claim term. The Federal Circuit has directed the courts that when '[p]roperly viewed, the 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321

(Fed. Cir. 2005) (*en banc*). The Federal Circuit has reaffirmed this opinion very recently where the Court found error in emphasizing the ordinary meaning of the term '"adjustable" without adequate grounding of that term within the context of the specification," which described adjustment as taking place without removing a head unit rather than generally being capable of being change. *Curtiss Wright Flow Control Corp. v. Velan, Inc.*, Case No. 05-1373, slip op. at 7 (Fed. Cir. February 15, 2006).

In contrast to the conclusion relied on by the Office, Applicants' have defined the meaning of the term "target analyte." Applicants' set forth in their previous response a particular definition in the specification where the term "target analyte" is defined as a molecule when Applicants' stated:

> The claimed invention is directed to various methods of analyzing a target analyte. In particular, the application defines a target analyte to be a molecule when it describes:
>
> > The present invention is directed to the detection of patient sample components or target analytes. By "patient sample components" or "target analytes" or grammatical equivalents herein is meant any molecule in the sample which is to be detected, with proteins and nucleic acids being preferred, and nucleic acids being particularly preferred.
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> Application at page 6, lines 28-31 (emphasis added).

Response dated Sept. 15, 205, at page 11.

The Office appears to recognize that a target analyte is defined as a "molecule" but fails to acknowledge that reference to two portions of a molecule refers to components of the same molecule rather than to two different molecules. In supporting its position the Office asserts that "neither the claims nor specification define the target detection or its detection as an entire molecule." This conclusion is unsupported and fails to address Applicants' claimed distinction. Applicants have not intended to suggest that a method step, or "target detection," should be compared to a molecule or "target analyte," nor have Applicants intended to make a distinction between such a method step and a physical thing as is apparently being suggested by the Office. Such a comparison is non-analogous and any basis for maintaining the current ground of rejection on this comparison is unsupported. Applicants' set forth the definition of "target

analyte," not "target detection." Therefore, the relevant inquiry is whether "target analyte" is defined.

Furthermore, the Office maintains an overly broad interpretation of the term "target analyte," refusing to recognize the definition provided in the specification. Applicants have shown above and in their previous response that a target analyte refers to "any molecule in the sample which is to be detected. *Id.* Hence, the term "target analyte" is clearly defined and it is defined as a "molecule." It is not defined as a portion of a molecule as asserted by the Office.

Given this clear definition, the issue remains whether a *plurality* of different target analytes or molecules encompass a *plurality* of "target domains" in a single nucleic acid molecule as contended by the Office (*see e.g.,* Office Action mailed May 25, 2005; Applicants response filed September 15, 2005, and Office Action mailed October 18, 2005, at p.9, second full para. and para. spanning pages 9 and 10). As set forth above and in Applicants' previous response, a target analyte is a molecule, not a portion of a molecule. Thus, a plurality of target analytes is distinct from a plurality of target domains if the target domains are on a single molecule because such target domains when present on the same molecule are portions of that same molecule. Similarly, a plurality of nucleic acid molecules is distinct from a single nucleic acid molecule having a plurality of target domains.

Further, the application specifically distinguishes a target analyte from a portion of a target analyte when it teaches:

> In a preferred embodiment, the compositions and methods of the invention are directed to the detection of target sequences as the target analytes. The term "target sequence" or "target nucleic acid" or grammatical equivalents herein means a nucleic acid sequence on a single strand of nucleic acid. The target sequence may be a portion of a gene, a regulatory sequence, genomic DNA, cDNA RNA including mRNA and rRNA, or others.

Application at page 8, lines 22-26.

Therefore, a target analyte is molecule, but a portion of a target analyte is a target sequence. Chee et al. support this distinction. The Office's citation to Chee et al. where it purportedly defines "target domains as 'target' domains" [*sic*] instead defines a "target domain"

as a target sequence. Response mailed October 18, 2005 (*citing* Chee et al., col. 9, lines 40-59). Thus, even Chee et al. distinguishes between a target analyte and a target domain.

Applicants have claimed a method wherein a plurality of different target analytes or molecules are detected and not different target sequences or portions of only a single nucleic acid. Accordingly, Applicants teach that a target analyte is a molecule and that it is distinct from a portion of a molecule as supported by the teachings in the application. Had Applicant intended to claim a portion of only a single target analyte, the claim would recite the term "portion" or the term "target sequence." Because the claims do not recite a term clearly used differently in the application, the Office has little basis to apparently assign the same meaning to these different terms. *Phillips v. AWH Corp.*, 415 F.3d at 1321; *Curtiss Wright Flow Control Corp. v. Velan, Inc.*, Case No. 05-1373, slip op. at 7.

In light of the above remarks, the three embodiments of Chee et al. do not anticipate the claims at least for the reasons already of record and set forth below.

The first embodiment of Chee et al. alleged to anticipate the claims is a target nucleic acid having two "target domains" and immobilized on a microsphere (column 18, lines 13-18 and 61-62). In contrast, the claims require that at least two different target analytes (or target nucleic acid molecules) are attached to each microsphere. As set forth above, a single molecule having two target domains as described by Chee et al. is distinct from the at least two target analytes (or target nucleic acid molecules) as claimed. Therefore, the first embodiment does not anticipate the claims.

The second embodiment of Chee et al. alleged to anticipate the claims is a target probe ligation product immobilized on microspheres having individual probes wherein the microspheres further include an identifier binding ligand (IBL) that is a target analyte for a specific decoder binding ligand (DBL) (column 43, lines 36-47 and column 44, lines 8-27). In contrast, the claims, in addition to requiring that at least two different target analytes (or target nucleic acid molecules) are attached to each microsphere, further require that the at least two different target analytes (or target nucleic acid molecules) are <u>from an individual</u>. Nowhere does Chee et al. describe the IBL as being from the same individual as the target probe ligation product. Therefore, the second embodiment does not anticipate the claims.

The third embodiment of Chee et al. alleged to anticipate the claims is a method wherein each microsphere includes a plurality of different IBLs each of which is an analyte for a DBL (column 45, lines 65-column 46, line 13 and column 46, lines 33-39). In contrast, the claims, in addition to requiring that at least two different target analytes (or target nucleic acid molecules) are attached to each microsphere, further require that the at least two different target analytes (or target nucleic acid molecules) are from an individual. Nowhere does Chee et al. describe the use of two or more nucleic acid molecules that are from the same individual as IBLs. Therefore, the third embodiment does not anticipate the claims.

Accordingly, the claimed invention is distinct from Chee et al. and withdrawal of this ground of rejection is respectfully requested.

CONCLUSION

In light of the Amendments and Remarks herein, Applicant submits that the claims are in condition for allowance and respectfully request a notice to this effect. Should the Examiner have any questions, he is invited to call the undersigned attorney.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502624 and please credit any excess fees to such deposit account.

Respectfully submitted,

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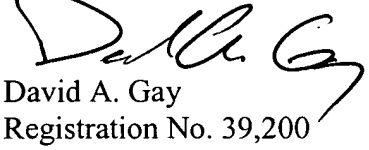

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